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2015

Test 2136: John Deere 6175R AutoQuad-Plus

Nebraska Tractor Test Laboratory

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NEBRASKA OECD TRACTOR TEST 2136—SUMMARY 1006

JOHN DEERE 6175R AUTOQUAD-PLUS DIESEL

20 SPEED

POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Diesel Consumption Gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	D.E.F. Consumption Gal/hr (l/h)	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION						
Rated Engine Speed—(PTO speed—1072 rpm)						
143.91 (107.31)	2100	8.82 (33.39)	0.429 (0.261)	16.32 (3.21)	0.17 (0.64)	Fuel used during active exhaust regeneration-1.48 gal (5.60 l) (see note 1, p.2)
Standard Power Take-off Speed (1000 rpm)						
162.90 (121.48)	1959	9.33 (35.33)	0.401 (0.244)	17.45 (3.44)	0.24 (0.92)	
Maximum Power (1 hour)						
174.93 (130.44)	1701	9.60 (36.32)	0.384 (0.234)	18.23 (3.59)	0.21 (0.79)	

VARYING POWER AND FUEL CONSUMPTION

143.91 (107.31)	2100	8.82 (33.39)	0.429 (0.261)	16.32 (3.21)	0.17 (0.64)	Air temperature
125.80 (93.81)	2161	8.16 (30.90)	0.455 (0.276)	15.41 (3.04)	0.14 (0.54)	75°F (24°C)
95.88 (71.50)	2194	6.84 (25.90)	0.500 (0.304)	14.01 (2.76)	0.09 (0.36)	Relative humidity
64.88 (48.38)	2223	5.66 (21.43)	0.611 (0.372)	11.46 (2.26)	0.07 (0.27)	55%
33.06 (24.65)	2242	4.42 (16.72)	0.936 (0.569)	7.48 (1.47)	0.06 (0.24)	Barometer
0.52 (0.39)	2250	3.04 (11.52)	41.239 (25.085)	0.17 (0.03)	0.05 (0.19)	28.90" Hg (97.87 kPa)

Maximum torque - 560 lb.-ft. (759 Nm) at 1550 rpm

Maximum torque rise - 55.7%

Torque rise at 1682 engine rpm - 51%

Power increase at 1701 engine rpm - 21.6%

DRAWBAR PERFORMANCE

UNBALLASTED - FRONT DRIVE ENGAGED

FUEL CONSUMPTION CHARACTERISTICS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	D.E.F. Consumption lb/hp.hr (kg/kW.h)	Temp. °F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
Power at Rated Engine Speed—7th (B3) Gear										
136.14 (101.52)	9837 (43.75)	5.19 (8.35)	2099	2.7	0.454 (0.276)	15.44 (3.04)	0.014 (0.009)	188 (86)	60 (15)	28.61 (96.88)
75% of Pull at Rated Engine Speed—7th (B3) Gear										
106.61 (79.50)	7324 (32.58)	5.46 (8.79)	2191	1.9	0.493 (0.300)	14.20 (2.80)	0.013 (0.008)	187 (86)	71 (22)	28.61 (96.88)
50% of Pull at Rated Engine Speed—7th (B3) Gear										
72.83 (54.31)	4916 (21.87)	5.56 (8.95)	2216	1.2	0.578 (0.352)	12.12 (2.39)	0.015 (0.009)	187 (86)	72 (22)	28.60 (96.85)
75% of Pull at Reduced Engine Speed—11th (C3) Gear										
107.66 (80.28)	7423 (33.02)	5.44 (8.75)	1373	1.9	0.425 (0.259)	16.47 (3.24)	0.020 (0.012)	188 (86)	74 (23)	28.58 (96.78)
50% of Pull at Reduced Engine Speed—11th (C3) Gear										
72.73 (54.23)	4875 (21.68)	5.59 (9.00)	1401	1.2	0.466 (0.284)	15.02 (2.96)	0.017 (0.010)	186 (86)	74 (23)	28.58 (96.78)

Location of tests: Nebraska Tractor Test Laboratory, University of Nebraska, Lincoln, Nebraska 68583-0832

Dates of tests: October 7-22, 2015

Manufacturer: John Deere Tractor Works, 3500 East Donald Street, P.O. Box 270, Waterloo Ia, 50704-0270

CONSUMABLE Fluids, OIL and TIME: Fuel No. 2 Diesel **Specific gravity converted to 60°/60°F (15°/15°C)** 0.8412 **Fuel weight** 7.004 lbs/gal (0.839 kg/l) **Diesel Exhaust Fluid (DEF)** 32% aqueous urea solution **DEF weight** 9.071 lbs/gal (1.087 kg/l) **Oil SAE 10W-30 API service classification CJ-4** **Transmission and hydraulic lubricant** John Deere Hy-Gard fluid **Front axle lubricant** John Deere Hy-Gard fluid **Total time engine was operated:** 21.5 hours

ENGINE: Make John Deere **Diesel Type** six cylinder vertical with turbocharger, air to air intercooler and D.E.F. (diesel exhaust fluid) exhaust treatment **Serial No.** *PE6068U004919* **Crankshaft** lengthwise **Rated engine speed** 2100 **Bore and stroke** 4.19 x 5.00" (106.5 mm x 127.0 mm) **Compression ratio** 17.0 to 1 **Displacement** 414 cu in (6788 ml) **Starting system** 12 volt **Lubrication pressure** **Air cleaner** two paper elements and aspirator **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** one paper element and prestrainer **Fuel cooler** radiator for pump return fuel **Exhaust** DOC (diesel oxidation catalyst), SCR (selective catalyst reduction) and regenerative DPF (diesel particulate filter) integrated within a vertical muffler **Cooling medium temperature control** 2 thermostats and 2 variable speed fans

ENGINE OPERATING PARAMETERS: Fuel rate: 60.8 - 65.7 lb/h (27.6 - 29.8 kg/h) **High idle:** 2225 - 2275 rpm **Turbo boost:** nominal 15.2 - 18.1 psi (105 - 125 kPa) as measured 16.7 psi (115 kPa)

CHASSIS: Type front wheel assist with duals **Serial No.** *1RW6175RAEA020110* **Tread width** rear 60.0" (1524 mm) to 124.6" (3164 mm) front 58.8" (1494 mm) to 86.9" (2206 mm) **Wheelbase** 110.2" (2800 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (4) range operator controlled power shift **Nominal travel speeds mph (km/h)** first 1.74 (2.80) second 2.09 (3.37) third 2.50 (4.03) fourth 3.07 (4.94) fifth 3.68 (5.93) sixth 4.44 (7.14) seventh 5.31 (8.55) eighth 5.86 (9.43) ninth 6.51 (10.47) tenth 7.06 (11.36) eleventh 8.45 (13.60) twelfth 10.35 (16.66) thirteenth 10.85 (17.46) fourteenth 13.07 (21.03) fifteenth 15.65 (25.18) sixteenth 19.17 (30.85) seventeenth 19.80 (31.86) eighteenth 23.84 (38.37) nineteenth 26.10 (42.00) twentieth 26.10 (42.00) electronically limited

DRAWBAR PERFORMANCE

UNBALLASTED - FRONT DRIVE ENGAGED - 2100 ENGINE RPM MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	D.E.F. Consumption lb/hp.hr (kg/kW.h)	Temp. °F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
3rd (A3) Gear										
114.61 (85.46)	18308 (81.44)	2.35 (3.78)	2183	10.6	0.509 (0.310)	13.76 (2.71)	0.016 (0.010)	188 (87)	47 (8)	28.70 (97.19)
4th (A4) Gear										
130.78 (97.52)	17059 (75.88)	2.88 (4.63)	2100	7.0	0.473 (0.288)	14.81 (2.92)	0.015 (0.009)	188 (86)	53 (12)	28.73 (97.29)
5th (B1) Gear										
134.59 (100.36)	14306 (63.63)	3.53 (5.68)	2100	4.8	0.459 (0.279)	15.27 (3.01)	0.014 (0.009)	188 (86)	61 (16)	28.72 (97.26)
6th (B2) Gear										
135.60 (101.11)	11804 (52.51)	4.31 (6.94)	2100	3.4	0.456 (0.277)	15.38 (3.03)	0.013 (0.008)	188 (87)	61 (16)	28.62 (96.92)
7th (B3) Gear										
136.14 (101.52)	9837 (43.75)	5.19 (8.35)	2099	2.7	0.454 (0.276)	15.44 (3.04)	0.014 (0.009)	188 (86)	60 (15)	28.61 (96.88)
8th (C1) Gear										
135.09 (100.73)	8819 (39.23)	5.75 (9.25)	2099	2.4	0.457 (0.278)	15.34 (3.02)	0.014 (0.009)	189 (87)	66 (19)	28.63 (96.95)
9th (B4) Gear										
132.67 (98.93)	7779 (34.60)	6.40 (10.30)	2100	2.1	0.464 (0.283)	15.08 (2.97)	0.014 (0.009)	187 (86)	65 (18)	28.62 (96.92)
10th (C2) Gear										
133.71 (99.71)	7213 (32.08)	6.95 (11.18)	2101	1.9	0.462 (0.281)	15.17 (2.99)	0.014 (0.008)	190 (88)	66 (19)	28.62 (96.92)
11th (C3) Gear										
133.10 (99.25)	5973 (26.57)	8.36 (13.45)	2100	1.5	0.463 (0.282)	15.13 (2.98)	0.014 (0.009)	189 (87)	68 (20)	28.63 (96.95)

reverse 1.81 (2.92), 2.18 (3.51), 2.61 (4.21), 3.20 (5.15), 3.84 (6.18), 4.63 (7.45), 5.54 (8.91), 6.11 (9.84), 6.79 (10.93), 7.36 (11.85), 8.82 (14.19), 10.81 (17.39), 11.32 (18.22), 13.63 (21.94), 17.57 (26.28), 20.00 (32.19), 20.66 (33.25), 24.87 (40.03), 26.10 (42.00), 26.10 (42.00) electronically limited **Clutch** wet multiple disc hydraulically actuated by foot pedal **Brakes** wet multiple disc hydraulically operated by two foot pedals that can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 1960 engine rpm or 1000 rpm at 1960 engine rpm **Unladen tractor mass** 18490 lb (8387 kg)

NOTE 1: The manufacturer declares that the average time between active regenerations is 25 hours, while operated in Auto Filter Cleaning Mode, at rated speed, full load, under steady state conditions.

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. The performance figures on this summary were taken from a test conducted under the OECD Code 2 test procedure.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **2136**, Nebraska Summary 1006, December 10, 2015.

Roger M. Hoy
Director

M.F. Kocher
J.D. Luck
P.J. Jasa
Board of Tractor Test Engineers

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive	
	Engaged dB(A)	Disengaged dB(A)
At no load in 6th (B2) gear	68.6	68.6
Transport speed - no load - 18th (F2) gear		73.0
Bystander in 18th (F2) gear		82.2

TIRES AND WEIGHT

Rear Tires - No., size, ply & psi (kPa)

Front Tires - No., size, ply & psi (kPa)

Height of Drawbar

Static Weight with operator - Rear

- Front

- Total

Tested Without Ballast

Four 480/80R46;***;12(85)

Two 420/90R30;***;12(85)

22.0 in (560 mm)

12615 lb (5722 kg)

6050 lb (2744 kg)

18665 lb (8466 kg)

DRAWBAR PERFORMANCE
UNBALLASTED - FRONT DRIVE ENGAGED - 1700 ENGINE RPM
MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption		D.E.F. Consumption	Temp. °F(°C)		Barom. inch Hg (kPa)
					lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	lb/hp.hr (kg/kW.h)	cool- ing med	Air dry bulb	
3rd (A3) Gear										
114.69 (85.52)	18323 (81.50)	2.35 (3.78)	2183	10.8	0.509 (0.310)	13.75 (2.71)	0.016 (0.010)	188 (87)	48 (9)	28.70 (97.19)
4th(A4) Gear										
133.21 (99.33)	17731 (78.87)	2.82 (4.54)	2076	7.9	0.474 (0.288)	14.79 (2.91)	0.015 (0.009)	188 (86)	55 (13)	28.73 (97.29)
5th(B1) Gear										
149.75 (111.67)	17076 (75.96)	3.29 (5.29)	1999	6.7	0.444 (0.270)	15.77 (3.11)	0.014 (0.009)	189 (87)	57 (14)	28.73 (97.29)
6th(B2) Gear										
156.05 (116.36)	15987 (71.11)	3.66 (5.89)	1829	5.8	0.428 (0.260)	16.37 (3.23)	0.014 (0.009)	191 (88)	58 (14)	28.73 (97.29)
7th(B3) Gear										
161.01 (120.07)	14649 (65.16)	4.12 (6.63)	1700	4.8	0.415 (0.253)	16.87 (3.32)	0.013 (0.008)	193 (89)	62 (16)	28.63 (96.95)
8th(C1) Gear										
161.54 (120.46)	13233 (58.86)	4.58 (7.37)	1700	4.0	0.413 (0.251)	16.94 (3.34)	0.013 (0.008)	196 (91)	69 (20)	28.62 (96.92)
9th(B4) Gear										
162.27 (121.00)	11908 (52.97)	5.11 (8.22)	1700	3.3	0.411 (0.250)	17.03 (3.36)	0.013 (0.008)	196 (91)	64 (18)	28.62 (96.92)
10th(C2) Gear										
162.05 (120.84)	10919 (48.57)	5.57 (8.96)	1700	3.0	0.411 (0.250)	17.05 (3.36)	0.013 (0.008)	196 (91)	68 (20)	28.62 (96.92)
11th(C3) Gear										
162.17 (120.93)	9071 (40.35)	6.71 (10.79)	1700	2.4	0.412 (0.251)	16.99 (3.35)	0.013 (0.008)	197 (91)	67 (19)	28.63 (96.95)
12th(C4) Gear										
159.47 (118.92)	7246 (32.23)	8.25 (13.28)	1699	1.9	0.417 (0.254)	16.78 (3.31)	0.013 (0.008)	197 (92)	67 (20)	28.62 (96.92)

HYDRAULIC PERFORMANCE

CATEGORY: III

Quick Attach: No

Lift cylinders:

2 x 85 mm

Maximum force exerted through whole range: 11310 lbs (50.3 kN)

i) Sustained pressure at compensator cutoff: 2920 psi (201 bar)

three outlet sets combined

ii) Pump delivery rate at minimum pressure and rated engine speed: 41.0 GPM (155.2 l/min)

iii) Pump delivery rate at maximum hydraulic power: 40.1 GPM (152.0 l/min)

Delivery pressure: 2463 psi (170 bar)

Power: 57.7 HP (43.0 kW)

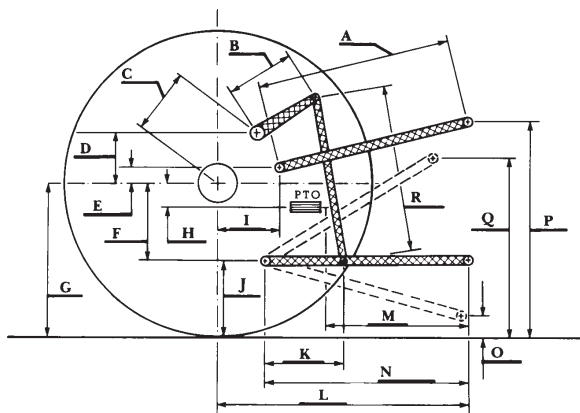
single outlet set

ii) Pump delivery rate at minimum pressure and rated engine speed: 32.4 GPM (122.7 l/min)

iii) Pump delivery rate at maximum hydraulic power: 30.6 GPM (115.9 l/min)

Delivery pressure: 2110 psi (145 bar)

Power: 37.7 HP (28.1 kW)



HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	mm
A	29.3	745
B	16.1	410
C	24.6	624
D	23.8	605
E	7.5	190
F	10.8	275
G	38.4	975
H	4.1	105
I	21.8	554
J	27.6	700
K	26.2	666
L	51.3	1303
M	26.9	683
N	43.6	1108
O	9.0	230
P	54.5	1385
Q	40.1	1018
R	43.9	1115



JOHN DEERE 6175R DIESEL